

Enhancing QoS in Wireless Network using Distributed Routing Protocol

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Abstract— Distributing the QoS resources in the applications of multimedia on the wireless network task has got challenging. Here we developed cross layer architecture, the services are provided. It also enabled at the physical layer of the layered architecture. Here the QoS-guaranteed and respected users proposed different technique provide good utilization of bandwidth also simultaneously increased. Furthermore, the cross-layer architecture should enables the low-complexity implementation and analysis, provides service across the network and increases the scalability. QoS reduces the transmission delay. Respective protocols are used in this paper to enhance the quality of service. Effective performance of quality of service is checked and faces robustness issues are briefly discussed. Various examples demonstrate the increased performance in multiple and single users as the network behavior for a large number of users should also be matters. Hence the data transmission will be secured across the wireless networks. The QoS increases the network capacity and increases the scalability of Various examples demonstrate the increased performance for a single and multiple users, as well as the network behavior for a large number of users should also be matters. the network. This should also increases the life tie of a network.

Keywords- Scalability, Reliability, Quality of service (QoS), MANET, Multipath Multi speed protocol, Qos routing.

I. INTRODUCTION

Wireless network performance is a major issue and an important factor for many network resources. It prevails over the entire world. However the multimedia applications such as audio and video being sent over public networks packet switched networks for accessing the required information. The guarantee of giving quality service to the present networks than it in the earlier is more important. Here various methods will be applied for finding ways to provide the reliability of the network and it will increases the network performance and also simultaneously it utilizes the several resources of the network in a required manner. Multiple challenges are associated with providing the services and guarantees the specific network availability. However, many more challenges will exists for wireless networks and mobile networks above those in wired networks respectively. For this reason, there are different sets of QoS techniques are needed for respective wireless networks than for wired networks in the network area.

These additional mechanisms and challenges helps to overcome the problems like network security and authority for securing the information. In this paper the organization should be as follows: Primarily it is associated with which application is used to guarantee the QoS in the network area, what type of applications will be required that should provides the guaranteed quality of service. And it is also associated with the what type of network challenges are used in that. Then this will defines some wireless QoS domain that is in the data link layer of the layered architecture. The other section defines

some wireless QoS domain that performs operations on the network layer in the network model. Then the remaining schedule will defines few integrated QoS support that will performs on the many layers of the network model respectively. And remaining applications describes some QoS criteria including the race condition and reservation. This paper also describes some QoS resources that are involving dynamic scheduling of the packets in the quality of service routing. In the wireless network if the source node not with in the range then the source node will select the very nearest neighbor node for the transmitting of data or information.[6].During the transmission of the data giving security is more needed. The reliable data packets are scheduled all over the network for providing a better quality of service. In the time of data packet transmission collision of data packets may occur so by using this technique the traffic flow is controlled.

II. LAYERED ARCHITECTURE OF MANET

It is a type of wireless network that has routing environment for networks on the top of the data link layer in the layered architecture of MANET. MANET contain peer-to-peer network which is self forming, self healing of network which contrast mesh network. Every device of MANET will be free in moving independent in all direction and it will be then changes the link with different devices respectively. Using the specific router each will transmit the traffic to its specific uses. There are various challenges in implementing then mobile ad hoc network, first challenge is that by implementing the mobile ad hoc network we can securely maintain the

information that we need and it will be properly motivated from source to destination. Hence the network will be operate themselves and they are connected in the large Inter networks and they also associated with the various transceivers between every node.

MANETS will also be used in increasing the data collection for the transmission of data to the different applications like monitoring the specific network security and also in different types of collection of architectures are used in the security across the mobile ad hoc networks [2].

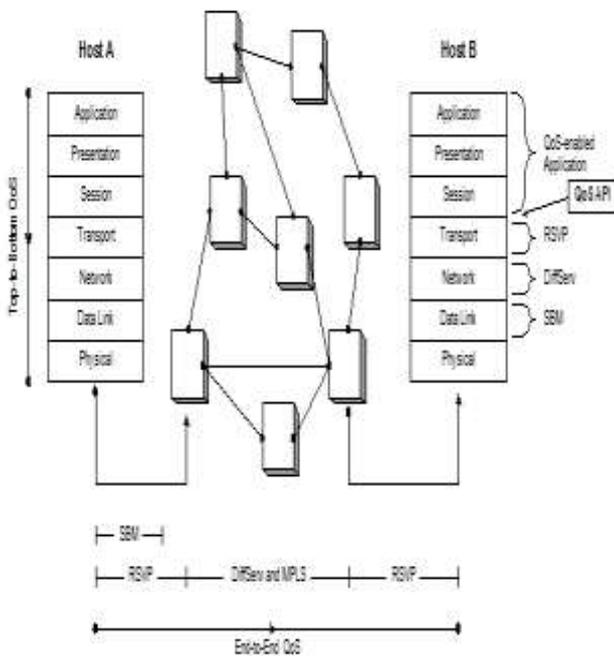


Figure 1. Layered architecture for MANET.

There must be a specific key characteristic in many applications which are near to the monitoring the sensor nodes by specifying different values in the wireless networks. Thus this type of redundancy of data in the sensors should be increases the mechanism to the network respectively. The transmitted data can be measured using different sensors present in the network these are specially meant for the mobile ad hoc networks. There are many contributions has been made in the earlier days but now the most significant and reliable contribution is using PGP (Pretty Good Privacy) based security in MANET. Any of the protocol has not made any trust based security and does not increases the network performance in wireless network. Few researchers have has been developed some of the new protocols for reliable data transmission. Mobile ad hoc networks will also be used to MANETS can be used in increasing the data collection for the transmission of data to the different applications like monitoring the specific network security and also in different types of collection of architectures are used in the security

across the mobile ad hoc networks. In the computer networks and some other communication networks, the redundancy of traffic will be considered as reservation of resource control technique other than the quality of service.

Quality of service is the ability of the network that provides different services to the network users and also to the different applications for the purpose of enhancing the reliable transmission and reliable data flow across the network. Similarly the transmission delay and loss of time during packet transmission should be detected and can be make the packets to reach its destination. Hence the quality of service should be guaranteed in the mobile ad hoc networks using suitable routing protocols respectively.

III. DISTRIBUTED ROUTING PROTOCOL FOR ENHANCING QOS

Here by implementing the reservation based quality of service routing, the wireless networks meets the problems like race condition as well as the invalid reservation in the mobile ad hoc networks.[4] In the QoS Oriented Distributed routing protocol (QOD) has been used to support the QoS capability in wireless networks. This protocol will offers the good QoS performance of wireless networks. The QOD helps in reducing delay in transmission of packets, scalability and mobility resilience. Protocol which is consisting of five algorithms:

- A QoS-guaranteed neighbor selection algorithm.
- A distributed packet scheduling algorithm.
- A mobility-based segment resizing algorithm.
- A traffic redundancy elimination algorithm.
- A data redundancy elimination-based transmission algorithm.

In QOD there the very first work was QoS routing for the networks of hybrid. Here we are discussing five major things. In the QoS guaranteed neighbor selection algorithm when the source node is not able to transmit the packets then it will takes the help of another node, it requests for the reliable neighbor node for the reliable routing. Then the Distributed packet scheduling algorithm will schedules the packets and transmits the packets in reliable manner. After selecting the qualified neighbor the source node then forwards the packet to the destination node with specific IP address of the node. After qualified neighbors are selected, this algorithm schedules packet routing. Then in the Mobility-based segment resizing algorithm, the source node will resizes the every packet of the specific packet stream respectively. The each neighbor node in spite of the neighbor's mobility will increases the feasibility of scheduling of packets in the source node. In Soft-deadline

based forwarding scheduling algorithm, the algorithm should be associated with the intermediate node which forwards packets with the least time span to achieve scalability. The redundancy of data elimination which is based on the transmission and nodes of mobile which overhears cache packet because of broadcasting feature in wireless networks. So by this algorithm we can improve QoS in transmitting the packet by eliminating data redundancy. QOD protocol can increase the capacity of network with increase in scalability of network. This will increase the life duration of network.

IV. MULTIPATH MULTISPEED PROTOCOL

Multipath multi speed may also happen in wired media, and it causes signal variations. A high-speed data transmission communication system usually involves the MMSPEED in network. MMSPEED of networks in wireless sensor that provide service reliability and dynamic QoS guarantees in the scalability and reliability criteria [8]. For the scalability criteria multiple network for wide option in providing various types of traffic which specifically choose the appropriate option for speed up the packets during the end to end transmission. The reliability criteria, probabilistic multipath forwarding is used to transmit the packets across the network in reliable manner and it controls depending on the paths number of packets required for end to end transmission. For the scalability criteria network wide multiple speed option are given so that different types of traffic will select the correct options for speed up packets [3]. In MMSPEED is commonly used for the wireless network medium for enhancing the specific quality of service. As a result, Multipath Multi SPEED can specifically increase the effective capacity of a wireless networks in terms of reliability and scalability. Thus QoS will be increased but some other tools can be used to speeding performance.

V. RELIABLE AND EFFICIENT FORWARDING IN HYBRID NETWORKS

A hybrid wireless network is associated with the reliable transmission and also incorporated with efficient forwarding in a network and is meant for reliability and efficiency that is made up of mobile nodes allocated in a network topology. It is also a form of wireless networks [1]. Wireless networks include the wireless mesh users and gateways for reliable transmission of data. The network user needs information from the specific source. Then the wireless devices are able to forward the reliable information to the required node. Often the wireless devices consisting of mesh routers to forward the traffic in the data stream. The various wireless devices in the wireless network will often associated with the routing devices and also communication devices respectively. The area of network will work with the help of mobile nodes and the radio nodes as a single network and is sometimes called a wireless

mesh networks. Hence the wireless network access will be dependent on wireless radio nodes in the network. If one is not able to operate or if one node is not able to communicate, the other nodes are also fails to communicate in the network respectively. They can communicate with each other directly or through the specific intermediate nodes. In wireless network, we can implement the various techniques of wireless networks including additional technologies of communicating the network.

The hybrid wireless network consists of the wireless network architecture and it mainly concentrated on providing low cost and also effective bandwidth across the network. Here the wireless network architecture is associated with the reliable routers of network for the reliable data transmission in wireless network. Here the mesh architecture will also be able to forward the packets in wireless mesh networks. The intermediate nodes will not only transfers the packets but also helps in security by providing the IP address of the specific nodes. Wireless mesh network is having addition of nodes and needs some security devices while transmitting the packets. Also the wireless devices will be associated with various advantages according to the reliable forwarding. The wireless mesh networks are often associated with reliable transmission of data and it also incorporates the efficient forwarding of packets in the hybrid networks.

VI. QOS ROUTING PROTOCOL FOR RESERVATION OF RESOURCES

Providing quality of service is more difficult for mobile ad hoc networks due to two reasons. First is, there is wireless communication. And the radio nodes have broadcast nature. Thus, every transmission of packets will affect the link of the bandwidth and receiving activities of its neighboring links. Thus the transmitting nodes and receiving nodes will be affected. The mobile ad hoc network supports the quality of service routing in order to enhance the specific services. The routing protocols will also helps in increasing the bandwidth of the network. QoS guarantees in the scalability and reliability domains.[7] In QoS Oriented Distributed routing protocol (QOD) is proposed to enhance the QoS support capability in wireless networks. QOD protocol is specifically incorporated with the high performance of quality of service in hybrid networks. The QOD protocol is the major advantage in providing a good network security and also increases the network lifetime in hybrid network.

VII. CONCLUSION

Here we were discussed about providing the quality of service across the mobile ad hoc networks. QoS guarantees and efficient utilization of bandwidth also simultaneously increased. And the cross-layer architecture should enables the

low-complexity implementation and analysis, provides service across the network and increases the scalability. QoS reduces the transmission delay. Respective protocols are used in this paper to enhance the quality of service. The effectiveness of the network performance is checked using simulation and faces robustness issues are briefly discussed. Various examples demonstrate the increased performance of a single user and multiple users also with the network behavior for a large number of users should also be matters. Hence the data transmission will be secured across the wireless networks. The QoS increases the network capacity and increases the scalability of the network. This should also increases the life time of a network. QoS guarantees and efficient utilization of bandwidth and hence the required services will be provided at the wireless communications. Hence we can guarantee the services and security for the data that should be transmitted across the wireless networks.

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